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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/549,381

06/30/2006

Jerry L Hahnfeld

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109 7590 08/18/2008

The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
Midland, MI 48641-1967

EXAMINER

HEINCER, LIAM J

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

08/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/549,381	Applicant(s) HAHNFELD ET AL.	
	Examiner Liam J. Heincer	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1-2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

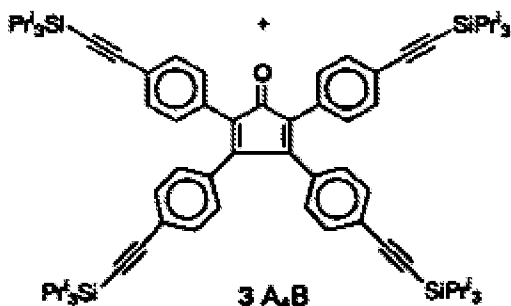
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Mullen et al. (Chem. Commun., 1998, 1139-1140).

Considering Claim 1: Mullen et al. teaches a compound of the formula



/a compound comprising a single ring structure and leaving group, and three or more dienophile groups (page 1139).

Considering Claim 6: Mullen et al. teaches a composition comprising the monomer (scheme 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

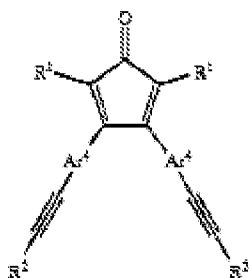
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

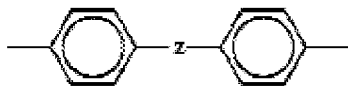
Note: The rejection below of claims 1 and 6 is being presented as an alternative to the rejection of claims 1 and 6 above to address limitations in the dependent claims.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Godschalx et al. (US Pat. 5,965,679) in view of Carter et al. (US Pat. 2001/0009293).

Considering Claims 1-4: Godschalx et al. teaches a compound of the formula



where R¹ and R² are phenyl groups, and Ar⁴ can be a phenyl group (Table 1, E) or an inertly substituted aromatic moiety (9:49-50) such as



, (5:55) where Z is an oxygen atom (7:28-29).

Godschalx et al. does not teach the end units as having multiple phenylethynyl groups. However, Carter et al. teaches a compound with two or more diaryl substituted acetylene moieties at the terminals (¶0005). Godschalx et al. and Carter et al. are analogous art as they are concerned with the same field of endeavor, namely diaryl acetylene terminated polymerizable compounds. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used multiple functionalities on the terminal groups of the compound of Godschalx et al. as in Carter

et al., and the motivation to do so would have been, as Carter et al. suggests, to give lower curing temperatures and more efficient crosslinking (¶0006).

Considering Claim 6: Godschalx et al. teaches a composition comprising the monomers (13:45-56).

Considering Claims 7 and 8: Godschalx et al. teaches an insulating film for an electronic device (14:58-61) formed by solvent casting the composition, followed by solvent evaporation and curing (14:48-57).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mullen et al. (Chem. Commun., 1998, 1139-1140) as applied to claim 1 above, and further in view of Godschalx et al. (US Pat. 5,965,679).

Considering Claim 1: Mullen et al. teaches the compound of claim 1 as shown above.

Mullen et al. does not teach one of the compounds of claim 5. However, Godschalx et al. teaches using phenylethynyl groups at the terminals of a polymerizable compound/thus giving 2,3,4,5-tetrakis-(4-phenylethynylphenyl)-2,4-cyclopentadienone (Table 1, E). Mullen et al. and Godschalx et al. are analogous art as they are concerned with the same field of endeavor, namely polymerizable cyclopentadienone compounds. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used phenylethynyl terminal groups in the compound of Mullen et al. as in Godschalx et al., and the motivation to do so would have been, as Godschalx et al. suggests, they are readily polymerizable (2:18-24), while Mullen et al. requires an extra reaction step to remove the end groups (page 1139).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO Form 892.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

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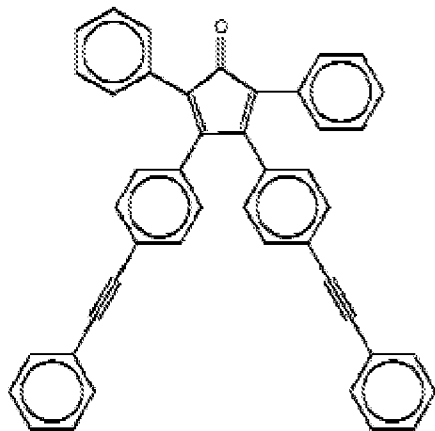
and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 29 of U.S. Patent No. 5,965,679 in view of Carter et al. (US Pat. 2001/0009293).

Considering Claims 1-3: Claim 29 of Patent '679 teaches 3,4-Bis(4-(phenylethynyl)phenyl)-2,5-diphenylcyclopentadienone/a compound of the formula



(Claim 29).

Claim 29 of Patent '679 does not teach the end units as having multiple phenylethynyl groups. However, Carter et al. teaches a compound with two or more diaryl substituted acetylene moieties at the terminals (\S 0005). Claim 29 of Patent '679 and Carter et al. are analogous art as they are concerned with the same field of endeavor, namely diaryl acetylene terminated polymerizable compounds. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used multiple functionalities on the terminal groups of the compound of Claim 29 of Patent '679 as in Carter et al., and the motivation to do so would have been, as Carter et al. suggests, to give lower curing temperatures and more efficient crosslinking (\S 0006).

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./

LJH

Supervisory Patent Examiner, Art Unit 1796

August 13, 2008

14-Aug-08